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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known

Application Number	10/713,898
Filing Date	October 18, 2002
First Named Inventor	David Charles Schwartz, et al.
Art Unit	
Examiner Name	
Attorney Docket Number	960296.99047

U. S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

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Sheet	2	of	2	Attorney Docket Number	960296.99047

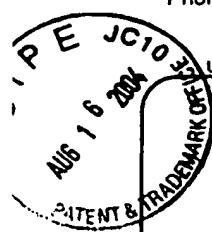
OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
SKM		Chih-Ming Ho, "Fluidics - The Link Between Micro and Nano Sciences and Technologies", Proceedings of the IEEE 14th Annual International Conference On Microelectro Mechanical Systems. MEMS 2001. Interlaken, Switzerland, Jan 21-25,			
SKM		2001, IEEE International Micro Electro Mechanical Systems Conference, New York, NY: IEEE, US, vol. CONF. 14, (01-21-2001), pgs 375-384, XP010534628 ISBN: 0-7803-5998-4, pg 378-379			
SKM		Unger M A Et Al: "Monolithic Microfabricated Valves and Pumps by Multilayer Soft Lithography", Science, American Association For The Advancement Of Science, US, vol. 288, 04/07/2000, pgs. 113-116, XP002192277 ISSN: 0036-8075 Figure 1			
SKM		Stix, Gary; "Thinking Big-A Harvard Medical School dropout aims to usher in the personal-genomics era," Innovations, Scientific American, June 2002, pgs. 30-31.			
SKM		Stikeman, Alexandra, "Nanobiootech Makes The Diagnosis," Technology Review, May 2002, pgs. 61-66.			

Examiner Signature	/Stephanie Mumment/ (10/12/2006)	Date Considered	10/12/2006
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Prior Art Cited in US. PATENT NO. 5,720,928

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Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
SKM	FR 2605472		Apr., 1988	Alain Bouillet		
V	WO 84/02001		May, 1984	Trustees of Columbia Univers		
	WO 87/01955		Sep., 1987	Washington University		

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SKM		Chattoraj et al., "DNA Condensation with Polyamines", J. Mol. Biol. 121, (1978), pp.327-337.	
		Ohi et al., "Mapping of Mitochondrial 4S RNA Genes... by Electron Microscopy", J. Mol. Biol. 212, (1978), pp 299-310.	
		Manuelidis et al, Biol. Abstr. 76(4); Ref. No. 27153; p. 2940.	
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		Hansma, H.G. et al., 1993, "Atomic force microscopy of DNA in aqueous solutions", Nucleic Acids Research 21: 505-512.	
		Karrasch, S. et al., 1993, "Covalent Binding of Biological Samples to Solid Supports for Scanning Probe Microscopy in Buffer Solution" Biophysical J. 65: 2437-2446.	
↓		Koob et al., 1992, "RecA-AC: single-site cleavage of plasmids and chromosomes at any predetermined restriction site" Nucleic Acids Res. 20:5831.	

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Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>			Complete If Known	
Sheet	3	of	9	
			Application Number 10/713,898 Filing Date October 16, 2002 First Named Inventor David Charles Schwartz, et al. Group Art Unit Examiner Name Attorney Docket Number 960296.99047	

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials'	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
SKM		Zenhausern et al., 1992, "Imaging of DNA by Scanning Force Microscopy", <i>J. Struct. Biol.</i> 108: 69-73.	
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		Bustamante et al., 1992, "Circular DNA Molecules Imaged in Air by Scanning Force Microscopy", <i>Biochemistry</i> 31: 22-26.	
		van den Engh, et al., 1992, "Estimating Genomic Distance from DNA Sequence Location in Cell Nuclei by a Random Walk Model", <i>Science</i> 257: 1410.	
		Allison et al., 1992, "Immobilization of DNA for scanning probe microscopy", <i>Proc. Natl. Acad. Sci. USA</i> 89: 10129-10133.	
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		Guo et al., 1992, "Sizing single DNA molecules", <i>Nature</i> 359:783-784.	
		Chumakov et al., 1992, "Continuum of overlapping clones spanning the entire human chromosome 21q", <i>Nature</i> 359:380.	
		Link, 1991, "Physical Map of the <i>Saccharomyces cerevisiae</i> Genome at 110-Kilobase Resolution", <i>Genetics</i> 127: 681.	
▼		Fernin et al., 1991, "Selective Cleavage of Human DNA: RecA-Assisted Restriction Endonuclease (RARE) Cleavage", <i>Science</i> 254: 1494.	

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SKM		Campbell et al., 1991, "Generation of a nested series of interstitial deletions in yeast artificial chromosomes carrying human DNA", Proc. Natl. Acad. Sci. USA 88:5744.	
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		Barlow et al., 1987, "Genetics by gel electrophoresis: the impact of pulsed field gel electrophoresis on mammalian genetics", Trends in Genetics 3: 167-177.	
		Burke et al., 1987, "Cloning of Large Segments of Exogenous DNA into Yeast by Means of Artificial Chromosome Vectors", Science 236: 806.	
↓		Church and Gilbert, 1984, "Genomic sequencing", Proc. Natl. Acad. Sci. USA 81: 1991.	

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SKM		Luckham and Klein, 1984, "Forces between Mica Surfaces Bearing adsorbed Polyelectrolyte, Poly-L-lysine, in Aqueous Media", Chem. Soc. Faraday Trans. I, 80: 865-878.		
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↓		Rampino and Chrambach, 1991, "Conformational correlates of DNA band compression and bidirectional migration during field inversion gel electrophoresis, detected by quantitative video epifluorescence microscopy", Biopolymers 31: 1297-1307.		

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SKM		Romling et al., 1989, "A physical genome map of <i>Pseudomonas aeruginosa</i> ", <i>EMBO J.</i> 8(13): 4081-4089.
		Smith et al., 1989, "Observation of Individual DNA Molecules Undergoing Gel Electrophoresis", <i>Science</i> 242: 203.
		Kucherlapati et al., 1988, <i>Genetic Recombination</i> pp. 92-106.
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		Ohi et al., 1978, "Mapping of Mitochondria 4S RNA genes in Xenopus laevis by electron microscopy", J. Mol. Biol. 121: 299.		
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		Woolf et al., "Mapping genomic organization by field inversion and two dimensional gel electrophoresis", Nucleic Acid Research, Vol. 16, No. 9 (1988), pp. 3863-3875.		
↓		Roemling et al., "A physical genome map of Pseudomonas aeruginosa", The EMBO Journal, Vol. 8, No. 13 (1989), pp. 4081-4089.		

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT			Application Number	10/713,898
(use as many sheets as necessary)			Filing Date	October 18, 2002
			First Named Inventor	David Charles Schwartz, et al.
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			Examiner Name	
Sheet 8 of 9			Attorney Docket Number	960296.99047

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
SKM		Yanagida et al., "Dynamic Behaviors of DNA Molecules in Solution...", Cold Sprg. Hrbr. Symp. Quant. Biol. 47, pp. 177-187, 1983.	
		Zubay, Biochemistry, 1988, pp. 918-919.	
		Kucherlapati et al., Genetic Recombination, 1988, pp. 92-106.	
		Smith et al., "Observation of Individual DNA Molecules Undergoing Gel Electrophoresis", Science 242, Jan. 13, 1989 pp. 203-206.	
		Carle et al., "Electrophoretic Separations of Large DNA molecules...", Science, Apr. 4, 1986, pp. 65-68.	
		Dev. et al., "Techniques for Chromosome Analysis", Techniques in Somatic Cell Genetics, edited by Shay, 1982, pp. 493-503.	
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		Manuelidis et al., Biol. Abstr. 76(4), Ref. No. 27153, P. 2940.	
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↓		K. R. Khrapko et al., "A Method For DNA Sequencing By Hybridization With Oligonucleotide Matrix", J. DNA Sequencing and Mapping, 1991, vol. 1, pp. 375-388.	

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				<p>First Named Inventor</p>	David Charles Schwartz, et al.
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SKM		R. C. Williams, "Use Of POlylysine For Adsorption Of Nucleic Acids and Enzymes To Electron Microscope Specimen Films", Proc. Natl. Acad. Sci. USA, vol. 74, No. 6, pp. 2311-2315, Jun. 1977.	
SKM		F. Fish et al., "A sensitive Solid Phase Microradioimmunoassay For Anti-Dougle Stranded DNA Antibodies", Arthritis and Rheumatism, vol. 24, No. 3 (Mar. 1981).	

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Prior Art Cited in U.S. Patent No. 6,294,136

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Sheet 1

of 8

Application Number 10/713,898

Filing Date October 18, 2002

First Named Inventor David Charles Schwartz, et al.

Art Unit

Examiner Name

Attorney Docket Number 960296.99047

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
SKM		US- 4,473,452	Sep., 1984	Cantor et al.	204/180
		US- 4,695,548	Sep., 1987	Cantor et al.	435/179
		US- 4,737,251	Apr., 1988	Carle et al.	204/182
		US- 4,767,700	Aug., 1988	Wallace	435/6
		US- 4,870,004	Sep., 1989	Conroy et al.	435/6
		US- 5,059,294	Oct., 1991	Lizardi	204/458
		US- 5,079,169	Jan., 1992	Chu et al.	436/174
		US- 5,314,829	May, 1994	Coles	436/165
		US- 5,380,833	Jan., 1995	Urdea	536/22
		US- 5,720,928	Feb., 1998	Schwartz	422/186
		US- 5,985,549	Nov., 1999	Singer et al.	435/6
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
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SKM		FR 2605472	Apr., 1988	Alain Bouillet		
		WO 84/02001	May, 1984	Trustees of Columbia Univers		
		WO 87/01955	Sep., 1987	Washington University		

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(Use as many sheets as necessary)				Filing Date	October 18, 2002
				First Named Inventor	David Charles Schwartz, et al.
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OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS					
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SKM		Allison et al., 1992, "Immobilization of DNA for Scanning Probe Microscopy", Proc. Natl. Acad. Sci. USA 89: 10129-10133.			
		Barlow and Lehrach, 1987, "Genetics by Gel Electrophoresis: The Impact of Pulsed Field Gel Electrophoresis on Mammalian Genetics", Trends in Genetics 3: 167-171.			
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		Bustamante et al., 1992, "Circular DNA Molecules Imaged in Air by Scanning Force Microscopy", Biochemistry 31: 22-26.			
		Campbell et al., 1991, "Generation of a Nested Series of Interstitial Deletions in Yeast Artificial Chromosomes Carrying Human DNA", Proc. Natl. Acad. Sci. USA 88: 5744-5748.			
		Carle et al., 1986, "Electrophoretic Separations of Large DNA Molecules by Periodic Inversion of the Electric Field", Science 232: 65-68.			
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▼		Chattoraj et al., 1978, "DNA Coordination with Polyamines", J. Mol. Biol. 121: 327-337.			

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			Filing Date	October 18, 2002
			First Named Inventor	David Charles Schwartz, et al.
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SKM		Chumakov et al., 1992, "Continuum of Overlapping Clones Spanning the Entire Human Chromosome 21q", Nature 359: 380-387.	
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		Gerlach et al., 1984, "Application of a High-Resolution TV-Microscope System to Estimate the Sequence of Centromere Separation in Muntjak Chromosomes", Cytometry 5: 562-571.	
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		Gosule and Schellman, 1978, "DNA Condensation with Polyamines I. Spectroscopic Studies", J. Mol. Biol. 121: 311-326.	
		Guo et al., 1993, "Sizing of Large DNA Molecules by Hook Formation in a Loose Matrix", J. Biomol. Struct. and Dynam. 11: 1-10.	
↓			

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SKM		Guo et al., 1992, "Sizing Single DNA Molecules", <i>Nature</i> 359: 783-784.		
		Gurrieri et al., 1990, "Imaging of Kinked Configurations of DNA Molecules Undergoing Orthogonal Field Alternating Gel Electrophoresis by Fluorescence Microscopy", <i>Biochemistry</i> 29: 3396-3401.		
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		Kucherlapati et al., 1988, Genetic Recombination p. 92-106.		
		Lawrence et al., Mapping In Situ: Presence and Orientation of Two Closely Integrated Copies of EBV in a Lymphoma Line", <i>Cell</i> 52: 51-61.		
↓		Lichter et al., 1990, "High-Resolution Mapping of Human Chromosome 11 by in Situ Hybridization with Cosmid Clones", <i>Science</i> 247: 64-69.		

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SKM		Link and Olson, 1991, "Physical Map of the <i>Saccharomyces cerevisiae</i> Genome at 110-Kilobase Resolution", <i>Genetics</i> 127: 681-698.	
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↓		Perkins et al., 1994, "Direct Observation of Tube-like Motion of a Single Polymer Chain", <i>Science</i> 264: 819-822.	

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Examiner Signature	/Stephanie Mummert/ (10/12/2006)	Date Considered	10/12/2006
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Substitute for form 1449B/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	10/713,898
<i>(use as many sheets as necessary)</i>				Filing Date	October 18, 2002
				First Named Inventor	David Charles Schwartz, et al.
				Group Art Unit	
				Examiner Name	
				Attorney Docket Number	960296.99047
Sheet 7		of 8			

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS		
Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
SKM		Southern, 1975, "Detection of Specific Sequences among DNA Fragments Separated by Gel Electrophoresis", J. Mol. Biol. 98: 503-517.
		Stallings et al., 1990, "Physical Mapping of Human Chromosomes by Repetitive Sequence Fingerprinting", Proc. Natl. Acad. Sci. USA 87: 6218-6222.
		Stellwagen, 1988, "Effect of Pulsed and Reversing Electric Fields on the Orientation of Linear and Supercoiled DNA Molecules in Agarose Gels", Biochemistry 27: 6417-6424.
		Stellwagen, N.C., 1985, "Orientation of DNA Molecules in Agarose Gels by Pulsed Electric Fields", J. Biomol. Str. and Dynam. 3: 299-314.
		Sturm and Weill, 1989, "Direct Observation of DNA Chain Orientation and Relaxation by Electric Birefringence: Implications for the Mechanism of Separation During Pulsed-Field Gel Electrophoresis", Physical Rev. Letters 62: 1484-1487.
		van den Engh et al., 1992, "Estimating Genomic Distance from DNA Sequence Location in Cell Nuclei by a Random Walk Model", Science 257: 1410-1412.
		Williams, 1977, "Use of Polylysine for Adsorption of Nucleic Acids and Enzymes to Electron Microscope Specimen Films", Proc. Natl. Acad. Sci. USA 74: 2311-2315.
		Woolf et al., 1988, "Mapping Genomic Organization by Field Inversion and Two Dimensional Gel Electrophoresis", Nucl. Acids Res. 16: 3863-3875.
		Yanagida et al., 1983, "Dynamic Behaviors of DNA Molecules in Solution..." Cold Spring Harbor Symp. Quant. Biol. 47: 177-187.
		Zenhausern et al., 1992, "Imaging of DNA by Scanning Force Microscopy", J. Struct. Biol. 108: 69-73.
↓		Zubay, 1988, Biochemistry (Macmillan Publishing Company, New York) pp. 918-919.

Examiner Signature	/Stephanie Mummert/ (10/12/2006)	Date Considered	10/12/2006
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		First Named Inventor	David Charles Schwartz, et al.
		Group Art Unit	
		Examiner Name	
Sheet	8	of	8
		Attorney Docket Number	960296.99047

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
SKM		Houseal et al., 1989, "Real-Time Imaging of Single DNA Molecules with Fluorescence Microscopy", Biophys. J. 56: 507-516.	

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Sheet 1 of 11

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Application Number	10/713,898
Filing Date	10/18/2002
First Named Inventor	David C. Schwartz
Art Unit	1732
Examiner Name	
Attorney Docket Number	960296.99047

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